REMARKS/ARGUMENTS

Status Of Application

Claims 1-33 are pending in the application; the status of the claims is as follows: claims 1-32 are rejected under 35 U.S.C. § 102(e); claim 33 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Please note that an Information Disclosure Statement, along with a PTO Form 1449, was filed on February 23, 1999; however, we have not received a copy of the PTO Form 1449 initialed by the Examiner. The PTO Form 1449 was returned with the Office Action mailed July 3, 2001, but was not initialed. Acknowledgment of receipt of this document is respectfully requested.

The indication in the Office Action that the Examiner has objections to the drawings under 37 C.F.R. § 1.83, is noted.

35 U.S.C. § 102(e) Rejection

The rejection of claims 1-32 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,246,804 B1 to Sato et al ("Sato"), is respectfully traversed based on the following.

A detailed explanation of the Sato patent was provided in Applicant's prior response, thus an explanation of the reference is not provided here for brevity.

In contrast to the cited reference, Claim 1 includes:

> an image database storing a plurality of database images, each of
> said plurality of database images having a plurality of features;
> a specifying controller for specifying **a plurality of key images**,
> each of said plurality of key images being specified by a user and having a
> respective plurality of features;

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an extracting controller for extracting common key image feature values for **common key image features that are common to the plurality of key images;**

a calculating controller for **comparing the common key image feature values,** extracted by the extracting controller, **with the respective feature values of the plurality of database images** to thereby sequentially calculate similarities between each of the common key image feature values and respective ones of the database image feature values for each of the plurality of database images; and

a searching controller for retrieving from the database at least one of the plurality of database images which is similar to the plurality of key images, based on a similarity calculated by the calculating controller. **(Emphasis Added.)**

Claim 1 includes the limitation that the searching system includes a specifying controller for specification of a plurality of key images to determine search criteria. The cited reference only designates a single image (the designated image 100) for the extraction of search criteria. Thus, the cited prior art does not show or suggest "a specifying controller for specifying **a plurality of key images."**

In the Office action, is is argued that:

> **First,** Applicant argues that Sato does not teach, "a specifying controller for specifying a plurality of key images".
>
> In response to Applicant's arguments, the Examiner respectfully submits that in particular, Sato teaches this limitation as specifying a controller (Fig. 1) for storing plurality of images in a plurality of features in the image file. Each features of image has designated color, size of the color (key) etc (Abstract, lines 1-9). Hence, Applicant's claimed specifying controller for specifying a plurality of key images are similar to Sato's specifying controller for specifying a plurality of key images.

The material cited by the Examiner does not support this position. Lines 1-9 of the Abstract states:

> An image retrieval method and apparatus for searching a plurality of images stored in an image file for a desired image are disclosed. When **a designated image** for designating an image to be retrieved for is input, and its color is designated, the sizes and colors are **compared between** description information which stores the feature of each of regions obtained

by dividing **each of images to be searched** stored in the image file, and feature data of **the designated image. (Emphasis Added.)**

It is additionally stated in the Sato patent:

> Referring to FIG. 2, reference numeral 100 denotes an image (to be referred to as a designated image hereinafter) for designating an image as a search target from the image files 109. The designated image 100 is stored in the designated image memory 101.

This passage clearly shows that a single designated image is specified for providing search criteria to be compared to a plurality of images in the image file. In contrast, in claim 1, a plurality of images is specified, common key image features are extracted from those specified images, and those common key image features are then compared to a database of images to retrieve those images with features similar to the common key image features. The only image specified to provide search criteria in the Sato patent is the single designated image. Thus, Sato does not show or suggest this limitation of the claims.

It is further argued:

> **Second**, Applicant argues that Sato does not teach, "an extracting controller for extracting common key images feature values for common key image features that are common to the plurality of key images and image search criteria".
> In response to Applicant's arguments, the Examiner respectfully submits that in particular, Sato teaches this limitation as stated above and image search from regions and extracting a plurality of images from correctly matched (common) (col. 14, lines 1-4, Fig. 21). Hence, Applicant's claimed extracting common key images and search criteria are similar to Sato's extracting common key images and image searching.

The passage cited by the Examiner does not show or suggest extracting common key image features for use as search criteria, it describes the actual searching process. As noted at column 13, line 57 – column 14, line 4:

> When a **portion of an image is input as a designated image, the designated image is divided into a plurality of regions**, a plurality of regions with different colors (a single color in each region) are generated by polygonal approximation of the boundary lines of the regions, thus generating a plurality of images (figures). As a result, even when a portion of an image is input as a designated image, image data including the designated image can be retrieved using these image portions.
> As described above, according to this embodiment, since processing for a compound region as a combination of a plurality of regions is performed together with processing for a single region, an image to be searched which is divisionally extracted as a plurality of regions can be correctly matched. **(Emphasis Added.)**

Thus the single designated image is divided into a plurality of regions and each individual pattern is processed (301-304) to provide single region information for that portion of the designated image (Figure 21). There is no suggestion to extract common features from the individual portions and there can be no common features between images because there is only one designated image. The reference simply does not show or suggest "extracting common key image feature values for common key image features that are common to the plurality of key images."

It is further argued:

> **Third**, Applicant argues that Sato does not teach, "specifying a plurality of key images, determining common feature values of those key images and comparing those common feature values to an image database".
> In response to Applicant's arguments, the Examiner respectfully submits that in particular, Sato teaches this limitation as stated above and searching a plurality of images stored in an image file for a desired image are disclosed. When a designated image for designating an image to be retrieved for is input, and its color is designated, the sizes and colors are compared between description information which stores the feature of each of regions obtained by dividing each of images to be searched stored in the image file, and feature data of the designated image. The regions, which are determined to be included in the designated image, of image data are obtained, and the similarities between the obtained regions of image data and the designated image are calculated (Abstract, lines 1-12 et seq). Hence, claimed comparing common feature values to an image database are similar to Sato's comparing common features in the database in image file.

Applicant simply does not understand this explanation. This describes the entire search process in the Sato reference. That is, a designated image is selected 100 and stored in the the designated image memory 101. Single region processing unit 102 compares regions of designated image 100 to region data for the image database 109, which are stored in description files 109 (column 6, lines 39-54). When matches are found, they are stored in the compound memory to further refine the matching process (column 6, lines 54-67). The maximum value selection unit 106 determines the similarity between the designated image and the compound data from the image files and generates a similarity value for that image (column 7, lines 1-9). Those images closest in similarity to the designated image are selected from the image file 109 as best matches. This is the entire searching process of the Sato reference.

In contrast to the one designated image that is parsed and processed to provide search criteria in the Sato reference, the invention of claim 1 starts with the specification of a plurality of images to provide search criteria. These images are compare to one another to derive common key features among the specified images. These common key features are then compared to the image database and the images from the database are selected based on their similarity to the common key features. The Examiner is apparently confusing the common key features extraction process with the entire search process of the Sato reference, although the process of the Sato reference never extracts any common key features for any purpose. The Sato reference only uses one designated image as the source for search criteria. The Sato reference does not show or suggest a user specified plurality of images, extracting common key features between the user specified plurality of images to provide search criteria and comparing those common key features to an image database to determine best matches.

A claim is anticipated only if every limitation of the claim is shown or suggested in the cited reference. MPEP §2131. Because the cited reference does not show or suggest the quoted limitations, claim 1 is not anticipated by the cited prior art. Claims 2 and 3 are dependent upon claim 1 and thus include every limitation of claim 1. Therefore, claims 1-3 are not anticipated by the cited prior art.

Also, in contrast to the cited prior art, claim 4 includes:

> a specifying controller for specifying a plurality of key images used to specify search conditions, each of said plurality of key images being specified by a user and having a plurality of key image features, each of said plurality of key images having a common feature value for each of said plurality of key image features;
> a calculating controller for comparing the plurality of key images, specified by the specifying controller, with the plurality of database images to thereby calculate similarities between the common feature value for each of the plurality of key image features and a corresponding one of the plurality of database image features for each of the plurality of database images;

As noted above, the cited prior art does not show or suggest an apparatus that selects a plurality of key images and determines the common features of the key images in order to provide image search criteria. Therefore, claim 4 is not anticipated by the cited prior art. Claims 5 and 6 are dependent upon claim 4 and thus include every limitation of claim 4. Therefore, claims 4-6 are not anticipated by the cited prior art.

Also in contrast to the cited prior art, claim 7 includes:

> a specifying controller for specifying a plurality of key images specified by a user for specifying search conditions;
> a first calculating controller for comparing a feature value calculated for each common feature of the plurality of key images to thereby calculate a first degree of similarity for each of said plurality of database images;

As noted above, the cited prior art does not show or suggest an apparatus that selects a plurality of key images and determines the common features of the key images in order to provide image search criteria. Therefore, claim 7 is not anticipated by the cited prior art. Claims 8-10 are dependent upon claim 7 and thus include every limitation of claim 7. Therefore, claims 7-10 are not anticipated by the cited prior art.

Also in contrast to the cited prior art, claim 11 includes:

> specifying a plurality of key images specified by a user for specifying search conditions;
> extracting common feature values from the plurality of key images;
> comparing the common feature values with the feature values of the plurality of database images to thereby sequentially calculate similarities between the common feature values and the database image feature values;

The cited prior art does not show or suggest a method including specifying a plurality of key images, determining common feature values of those key images and comparing those common feature values to an image database. The cited prior art designates a single image and then compares regions of that image to regions of the database images. Determining the common features of a single image is a non sequitur. There is no suggestion of determining any common features between the regions in the cited prior art. Therefore, the cited prior art does not show or suggest every element of claim 11. Claims 12 and 13 are dependent upon claim 11 and thus include every limitation of claim 11. Therefore, claims are not anticipated by the cited prior art.

Also in contrast to the cited prior art, claim 14 includes:

> specifying a plurality of key images specified by a user for specifying search conditions, said plurality of key images having common features, said common features of said plurality of key images each having a key image feature value;
> comparing the key image feature values of the plurality of key images with the plurality of database feature values of the plurality of database images to thereby calculate similarities between the key image feature values and the plurality of database image feature values;

As noted above, the cited prior art does not show or suggest selecting a plurality of key images and determining the common features of the key images in order to provide image search criteria. Therefore, claim 14 is not anticipated by the cited prior art. Claims 15 and 16 are dependent upon claim 14 and thus include every limitation of claim 14. Therefore, claims 14-16 are patentably distinct from the cited prior art.

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Claim 17 is directed to an image searching method which comprises the steps of:

specifying a plurality of key images specified by a user for specifying search conditions, said plurality of key images each having a plurality of common feature values, each of said common feature values corresponding to one of the features of the plurality of key images;
comparing the common feature values of the plurality of key images with respective feature values of the plurality of database images to thereby calculate first similarities therebetween;

As noted above, the cited prior art does not show or suggest selecting a plurality of key images and determining the common features values of the key images in order to provide image search criteria. Therefore, claim 17 is not anticipated by the cited prior art. Claims 18-20 are dependent upon claim 17 and thus include every limitation of claim 17. Therefore, claims 17-20 are patentably distinct from the cited prior art.

Also in contrast to the cited prior art, claim 21 includes

instructions for specifying a plurality of key images specified by a user for specifying search conditions;
instructions for extracting common feature values of features of the plurality of key images;
instructions for comparing the common feature values with feature values of the plurality of database images to thereby sequentially calculate similarities between the common feature values of the plurality of key images and the database image feature values;

The cited prior art does not show or suggest a software program including instructions for specifying a plurality of key images, extracting common feature values and comparing the extracted common feature values to the database images. Therefore, claim 21 is patentably distinct from the cited prior art. Claims 22 and 23 are dependent upon claim 21 and thus include every limitation of claim 21. Therefore, claims 21-23 are not anticipated by the cited prior art.

Also in contrast to the cited prior art, claim 24 includes:

> instructions for specifying a plurality of key images specified by a user having common feature values used to specify search conditions;
> instructions for comparing the plurality of key images with the plurality of database images to thereby calculate similarities between common feature values of the plurality of key images and the database image feature values;

The cited prior art does not show or suggest a software program including instructions for specifying a plurality of key images having common feature values and comparing the extracted common feature values to the database images. Therefore, claim 24 is patentably distinct from the cited prior art. Claims 25 and 26 are dependent upon claim 24 and thus include every limitation of claim 24. Therefore, claims 24-26 are not anticipated by the cited prior art.

Also in contrast to the cited prior art, claim 27 includes:

> instructions for specifying a plurality of key images specified by a user for specifying search conditions, said plurality of key images each having a plurality of features;
> instructions for calculating feature values for each of the plurality of key images from the plurality of features for each of the plurality of key images;
> instructions for comparing the feature values of each of the plurality of key images with respective feature values of the plurality of database images to thereby calculate first similarities between the feature values of the plurality of key images and the feature values of the plurality of database images;

The cited prior art does not show or suggest a software program including instructions for specifying a plurality of key images, extracting common feature values and comparing the extracted common feature values to the database images. Therefore, claim 27 is patentably distinct from the cited prior art. Claims 28-30 are dependent upon claim 27 and thus include every limitation of claim 27. Therefore, claims 28-30 are not anticipated by the cited prior art.

Accordingly, it is respectfully requested that the rejection of claims 1-14, 17-24, and 27-30 under 35 U.S.C. § 102(e) as being anticipated by the Sato patent, be reconsidered and withdrawn.

Also in contrast to the cited prior art, claim 31 includes the limitations of:

> specifying a plurality of key images specified by a user for specifying search conditions, said plurality of key images each having a plurality of key image features each corresponding to at least one of a plurality of database features, said plurality of key images having a plurality of common features which are common to all of the plurality of key images;
> calculating common key image feature values from the common features for each of the plurality of key images;
> comparing the common feature values of the common features with corresponding database image features of the plurality of database images to calculate similarities therebetween;

The cited prior art does not show or suggest specifying a plurality of key images, calculating the common features of the key images and comparing the common features to the database image features. The cited prior art designates a single image and then compares regions of that image to regions of the database images. Therefore, claim 31 is patentably distinct from the cited prior art.

Also in contrast to the cited prior art, claim 32 provides a computer program product including the steps of:

> specifying a plurality of key images specified by a user for specifying search conditions;
> calculating common feature values of the plurality of key images by comparing the plurality of key image features for each of the key images to determine feature values which are common to all of the plurality of key images;
> comparing common feature values of the plurality of key images with the database image feature values of the plurality of database images to calculate similarities therebetween;

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The cited prior art does not show or suggest specifying a plurality of key images, calculating the common features of the key images and comparing the common features to the database image features. The cited prior art designates a single image and then compares regions of that image to regions of the database images. Therefore, claim 32 is patentably distinct from the cited prior art.

Accordingly, it is respectfully requested that the rejection of claims 1-32 under 35 U.S.C. § 102(e) as being anticipated by Sato, be reconsidered and withdrawn.

CONCLUSION

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Response does not increase the number of independent claims, does not increase the total number of claims, and does not present any multiple dependency claims. Accordingly, no fee based on the number or type of claims is currently due. However, if a fee, other than the issue fee, is due, please charge this fee to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260.

Any fee required by this document other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

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